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Emerging Markets Queries in Finance and Business

The analysis of the ceramic sector in Romania's Center Development Region

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Abstract

The present study is a large part proposed within the PhD thesis, which has the aim to present the current situation of those enterprises that activate in the ceramic sector in Romania's Center Region. The main goal of the PhD thesis is to increase the competitiveness, flexibility, adaptability and reactivity of enterprises in the ceramic industry. For this reason, we elaborated a questionnaire, which had the role of showing us how competitive, flexible, adaptable and reactive these enterprises are. The questionnaire was completed by companies that have the following main areas of activity: manufacture of household and ornamental ceramic products, manufacture of other technical ceramic products, manufacture of other ceramic products, manufacture of ceramic sanitary items and manufacture of ceramic insulators and ceramic insulating components. The research methodology is based on statistical analysis. In order to perform the desired study we used SPSS (Statistical Package for Social Sciences), which is used in order to process statistical data, and it aims to obtain useful information. The results showed that both SME and large companies grant a high importance to the four performance capacities, and that the majority of the enterprises have a quite high level of performance. This paper brings significant contribution in the field of the ceramic industry on national scale emphasizing the Center Region's key role in this branch of the industry.

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Keywords: ceramic industry, performace, competitiveness, flexibility, adaptability, reactivity.

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1. Introduction

The theme chosen for the PhD thesis, entitled *Research on Industrial Enterprises' Performance Growth*, is very important and actual, due to the fact that industry has always been and will always remain one of the main sectors of national economy, but also because of the increasing importance of performance [Industrial policy, Chapter 15]. Industrial enterprises are basic economic units of national economy [E. Cazan, 2002]. Today, even during the crisis, companies appeal to the newest and most effective methods to be able to enhance their level of performance. This activity is always essential for an enterprise which desires to occupy and maintain s solid place on the market, which assures continuous activity, sustainable development and success. In order to succeed, companies have to be competitive, flexible, must be able to adapt, and must be reactive. All of these can determine success in increasing the performance of industrial enterprises. In the present study we focused on the ceramic sector. The main goal was to present the current situation of those enterprises that activate in the ceramic sector in Romania's Center Region. Several studies can be found on the ceramic sector of Romania, but we couldn't find any studies that refer to the ceramic sector of the Center Development Region, which means that this study is a novelty. The importance of the ceramic sector lies in the fact that no modern nation can stand without ceramics. Ceramics are needed for metal production, for construction, for glass making, for electronics, for telecommunication, for pollution control, for high tension insulators that are carrying electricity, etc.

2. Methodology

The research methodology is based on statistical analysis. To learn the current state of those enterprises that activate in the ceramic sector in Romania's Center Development Region, we elaborated a questionnaire. This represents one of the main techniques used by industrial market research. The questionnaire includes open and closed questions, importance questions, bipolar questions, etc. The questionnaire was prepared in order to find out the current situation of these enterprises, to see their current financial situation and to determine the importance given to competitiveness, flexibility, adaptability and reactivity by these companies. The questionnaire was completed by companies that have the following main areas of activity: manufacture of household and ornamental ceramic products, manufacture of other technical ceramic products, manufacture of other ceramic products, manufacture of ceramic sanitary items and manufacture of ceramic insulators and ceramic insulating components.

Based on the information we gathered from the National Institute of Statistics – County Statistics Department of Braşov, Covasna, Harghita, Mureş, Sibiu and Alba, and based on the information we obtained at www.totalfirme.ro, we identified 30 companies that have as main areas of activity the ones mentioned above.

Sample representativeness is the most important aspect of a research of this kind. To be representative, the response rate needs to be high. Non-responses are different form the rest of the population because these are considered to be a refusal to be included in the survey. Normally, the population would include 30 enterprises. In this case, the sample would be representative if the questionnaire would be completed by 28 companies. Due to the fact that 15 organizations refused to collaborate, we remained at a total number of 15 enterprises.

The data processing was performed using SPSS (Statistical Package for Social Sciences). This system is used in order to process statistical data, and it aims to obtain useful information [C. Constantin., 2006]. For presenting the results, we used especially histograms, which depict the distribution of a set of data. We chose histograms, because due to these it is easier to see where the majority of some values fall in a measurement scale. We can also see how much variation there is.

3. Determination of the performance criteria

As we mentioned before, we chose four performance criteria. These are the following: competitiveness, flexibility, adaptability and reactivity.

Competitiveness is one of the main concepts of assessing the level of performance of an enterprise. Competitiveness is a very complex concept, which covers a lot of aspects. Defining competitiveness is very difficult, and perhaps impossible, due to its multiple components and to its numerous indicators by which it can be revealed [I. Gavrila, 2008]. An organization can be competitive from financial, technical, commercial, managerial and organizational point of view. There are a lot of indicators which can help us measure an organization's degree of competitiveness.

The second criterion is represented by flexibility. If an organization wishes to develop, and wants to increase its level of performance, it can not slacken. It has to introduce new products, new technologies, it has to permanently develop its employees, and must always adapt to the business environment's and consumers' constantly changing demands and needs. A high level of performance can not be achieved without a flexible attitude. Nowadays flexibility is an essential and crucial requirement both in managerial and staff level.

If we presented flexibility, it is necessary to mention adaptability, too, which is the third performance criterion. If a growth of flexibility can be observed, then this will bring forth an effort of adaptation too.

The last performance criterion chosen consists in reactivity, which is also indispensable to increase performance, due to the fact that an industrial enterprise needs to be able to learn and respond actively and responsive to the environment.

4. The analysis of the questionnaires

4.1. The importance of the four performance capacities

The main purpose of the thesis consists in increasing the performance of industrial enterprises. This increase is intended to be achieved through the research of four categories that define the performance of these enterprises (competitiveness, flexibility, adaptability and reactivity). 73.30% of the respondents grant a great importance to competitiveness and to flexibility, 60% to adaptability, and reactivity (responsiveness) is considered to be very important by 46.70%.

4.2. The competitiveness degree of the basic technical equipment

In this case a range type of numerical scale has been used. From the histogram presented below we can observe a greater distribution around the 3rd and the 4th level of the scale, which represents a fairly high competitiveness degree of the basic technical equipment at most of the companies interviewed.

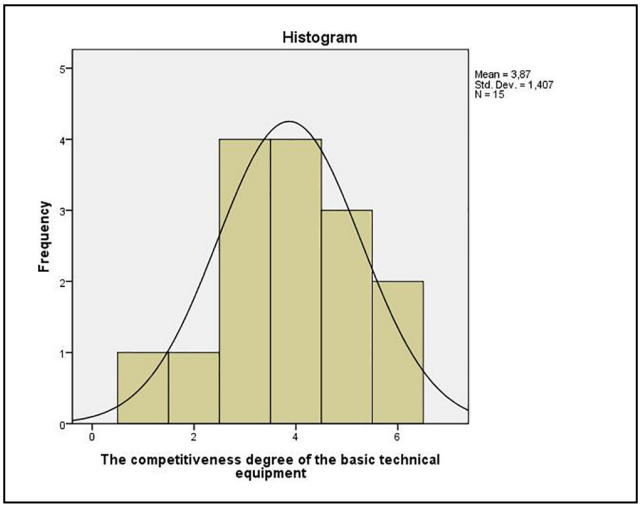

Fig1. The competitiveness degree of the basic technical equipment

4.3. Activities performed to ensure a permanent growth of the competitiveness degree

For this question the categories' method has been used.

Table 1. Activities performed to ensure a permanent growth of the competitiveness degree

	N	Percent	Percent of cases
Permanent monitoring of customers' satisfaction degree	12	20,0%	12
Investment in human capital	5	8,3%	5
Market research	7	11,7%	7
Renewal of production	9	15,0%	9
Increasing product quality	12	20,0%	12
Investment in equipment	9	15,0%	9
Work motivation	6	10,0%	6
Total	60	100,0%	60

From the table above we can observe that the 15 respondents indicated 60 responses. The modal value was registered for two activities, namely for the permanent monitoring of customers' satisfaction degree and for the increasing of the product quality. These activities were selected by 12 respondents, which represent 20% of all responses, and are performed by 80% of the surveyed leaders. The fewest responses, representing 8.30% of the total valid responses, can be observed in the case of investments in human capital (which is performed by 33.30% of the respondents).

4.4. Manifestation of flexibility

For this question we used the categories' method. In the table presented below we can observe that in the case of most companies flexibility is manifested in production flexibility and product flexibility.

Table 2. Manifestation of flexibility

		N	Percent	Percent of cases
Manifestation of flexibility	Flexibility of volume	3	7,3%	20,0%
	Product flexibility	9	22,0%	60,0%
	Flexibility of assortment	9	22,0%	60,0%
	Flexibility of development	5	12,2%	33,3%
	Production flexibility	9	22,0%	60,0%
	Technological flexibility	6	14,6%	40,0%
Total		41	100,0%	273,3%

The table presented above shows that the 15 respondents indicated 41 responses. The modal value was registered for three types of flexibility (product flexibility, flexibility of assortment and production flexibility), with 9 responses, which represent 22% of all responses. These types of flexibility are manifested in 60% of the

respondents. The fewest responses were recorded for the flexibility of volume, which represents 7.30% of all responses.

4.5. The flexibility degree of enterprises

The histogram type chart shows that most company leaders consider that their organization is highly flexible (66.70% of the respondents indicated the 5th and the 6th level of the scale). 20% of the respondents chose the 6th level of the scale, which still indicates a medium degree of flexibility. 13.30% of the respondents grant their organization a small degree of flexibility.

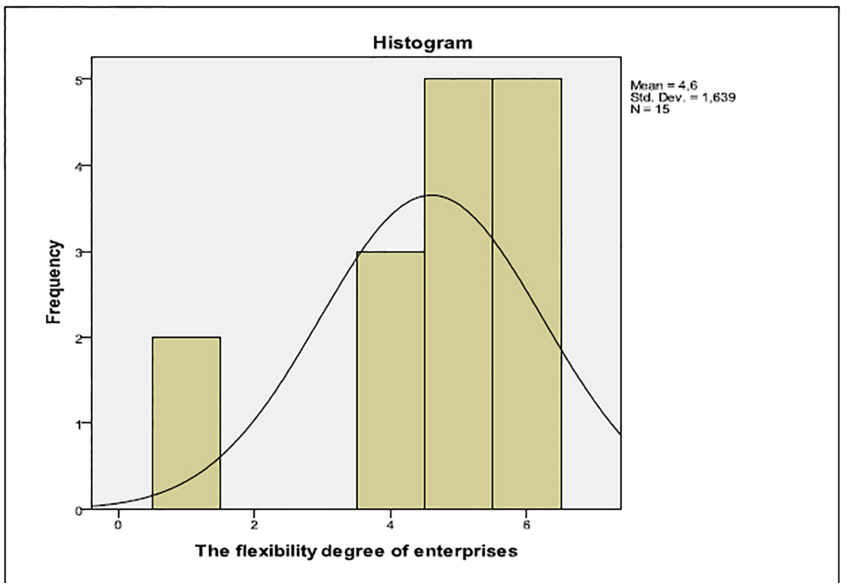

Fig 2. The flexibility degree of enterprises

4.6. Organizations' adaptation degree to market changes

We used again a range type of numerical scale. In the table and the chart presented below we can observe that most respondents (46.70%) believe that their organization can adapt to the market to which it addresses in a quite high degree (these respondents chose level 5 of the scale).

Table 3. Organizations' adaptation degree to market changes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Small degree	2	13,3	13,3	13,3
	4	4	26,7	26,7	40,0
	5	7	46,7	46,7	86,7
	High degree	2	13,3	13,3	100,0
	Total	15	100,0	100,0	

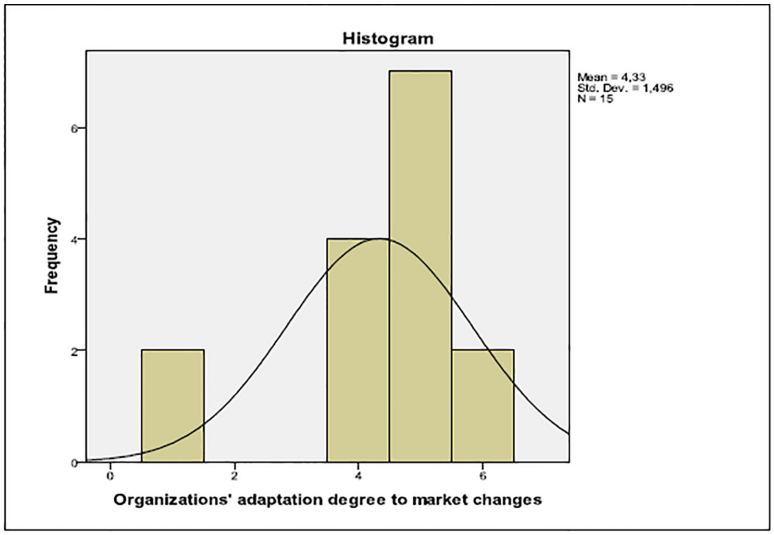

Fig 3. Organizations' adaptation degree to market changes

4.7. Organization's ability to continuously adapt its organizational structure and decision procedures to environmental changes

The purpose of this question was to determine whether the respondents' organization is able to continuously adapt its organizational structure and decision procedures to environmental changes. The majority of the interviewed enterprises (73.40%) believe that their organization is capable of this adaptation, while 13.30% think that their enterprise in not capable of this effort. 13.30% of the respondents don't know if this ability exists in their organization.

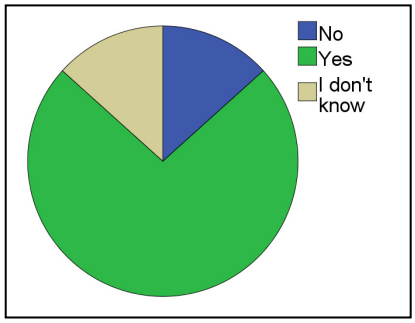

Fig 4. Organizations' ability to continuously adapt its organizational structure and decision procedures to environmental changes

4.8. The importance of reactivity, as an indispensable performance capacity

On a scale of 1 to 10, all of the respondents chose values above 5 on the scale, which is already a favorable result. Below we can follow the importance given to reactivity by enterprises (reactivity is referred to as an indispensable capacity to performance). 73.30% chose values above 8, which means that the majority of the respondents think that reactivity is indeed an indispensable performance capacity.

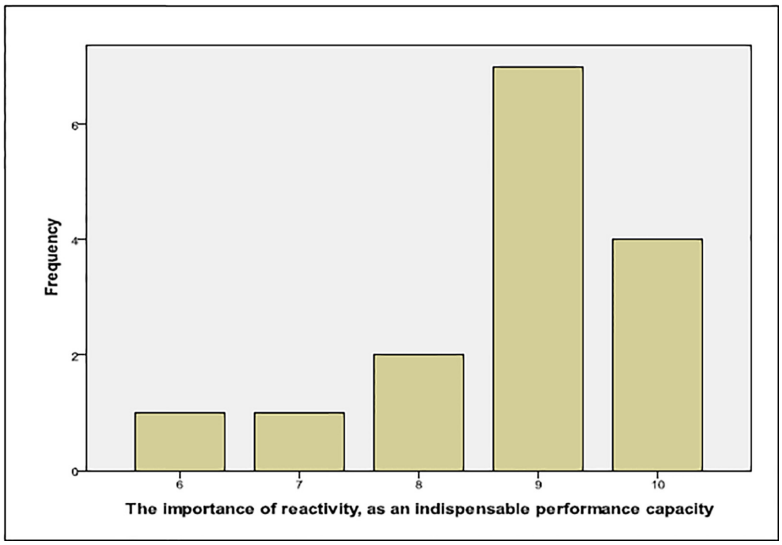

Fig 5. The importance of reactivity, as an indispensable performance capacity

4.9. Work motivation as constant preoccupation

In the case of this question a range type of numerical scale has been used. We wanted to find out if work motivation is a constant concern or not at management level. In the table presented below we can see that the majority of the respondents grant a high importance to work motivation.

Table 4. Work motivation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	1	6,7	6,7	6,7
	4	4	26,7	26,7	33,3
	5	3	20,0	20,0	53,3
	Is a constant concern	7	46,7	46,7	100,0
	Total	15	100,0	100,0	

5. Results

The theme chosen for the thesis is one of great importance and it is opportune, due to the fact that industry was and remains one of the leading sectors of national economy, but also because of the increasing importance of performance. To gain a clearer view of the current state of businesses operating in the ceramic sector, we elaborated a questionnaire. The completed questionnaires' analysis offered us some results from which we could draw several valuable conclusions:

- It could be observed that SME and large companies grant a high importance to competitiveness, flexibility, adaptability and reactivity.
- The majority of the interviewed companies are successful, because 66.66% of these are operating since the '90s, which also demonstrates a sustainable development throughout the years.

- Among the indicators of competitiveness the greatest accent is put on productivity, price accessibility and the personnel's level of competence.
- The competitiveness degree of the basic technical equipment is quite high in the case of 60% of the interviewed enterprises.
- In order to ensure a permanent growth of the competitiveness degree, the managers permanently monitor the customers' satisfaction degree and increase the quality of products.
- Only 33.30% of the respondents believe that their organization in highly flexible.
- In the case of most companies (60%) flexibility is manifested by product flexibility, flexibility of assortment and production flexibility.
- 46.70% believe that their organization can adapt in a quite high degree to the market to which it addresses.
- Most of the enterprises interviewed (73.40%) believe that their organization can continuously adapt its organizational structure and decision procedures to environmental changes.
- Most enterprises do not grant a proper importance to investments in human capital (in 2012 only 10% of the companies have invested in the training and the improvement of employees).
- The level of interest of the respondents regarding the results of the analysis is high (which shows us that they are open to new).

Therefore, the increase of performance is desired to be achieved through the research of the four categories mentioned. In order to be able to enhance the level of performance of these companies, an increase of competitiveness, flexibility, adaptability and reactivity is required, and an efficient management. This analysis represents an important part of the PhD thesis. Our opinion is that the results have shown us a clearer picture about the current state of these enterprises, about the greatest strengths and weaknesses that these are facing with. We hope that after further research we will find several representative indicators for the four performance capacities, which will lead us to determine some directions to improve the ceramic enterprises' performance. These will be followed by their mathematical modeling, the main aim being the defining of a complex mathematical model, which corresponds to the industrial enterprises' performance growth [Turoczy Zs., 2012].

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